1998 TOMATO NUTRIENT TRIAL

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ABSTRACT

A nutrient trial was conducted using Albion® Manganese Metalosate®, Potassium Metalosate, Zinc Metalosate, Magnesium Metalosate and Calcium Metalosate on a canning tomato variety, 'Stanislaus 55.' A foliar phosphorus, Nutriphite, 4-30-8 was also applied. Yield showed a significant increase in the treated trial with a weight increase of 11.5% (4.2 Tons/A, 9.4 tonnes/ha), over the Actagro trial and 15% (5.3 Tons/A,12.72 tonnes/ha) over the growers standard program.

MATERIALS

Three foliar applications were made. The first application on June 16, 1998, was applied using 32 ounces per acre (2.24 L/ha) of Calcium Metalosate, 32 ounces per acre (2.24 L/ha) of Manganese Metalosate, 32 ounces per acre (2.24 L/ha) of Potassium Metalosate, and 16 ounces per acre (1.12 L/ha) of Magnesium Metalosate. The Actagro treated block received 5 gallons per acre (47 L/ha) of a 7-21-0 + humus material on the same date. A second application of 32 ounces per acre (2.24 L/ha) of Manganese Metalosate, 24 ounces per acre (1.68 L/ha) of Potassium Metalosate and 24 ounces per acre (1.68 L/ha) Calcium Metalosate and 24 ounces per acre (1.68 L/ha) Zinc Metalosate was applied on July 20, 1998. The Actagro trial was sprayed with 8 gallons per acre (75 L/ha) of 7-21-0 + humus on the same date. The third application of 64 ounces per acre (4.49 L/ha) of Potassium Metalosate, 24 ounces per acre (1.68 L/ha) of Zinc Metalosate, and 48 ounces per acre (3.36 L/ha) of Nutriphite 4-30-8 were applied on August 27, 1998. All materials were tank mixed and applied by air. The 7-21-0 + humus was applied at a rate of 8 gallons per acre (75 L/ha) on the same date on the Actagro trial. The Metalosate treatments were based on a T.E.A.M.® analysis prior to application. The grower standard practice received no foliar nutrient treatments.

METHODS

Four sixty inch (1.5 m) randomized test plots in each of the three trial sections, each 10 feet (3.0 m) in length, were used. The three section areas were identified as East section (Actagro), Center Section (Grower's Standard Practice), and west section (Albion). Morning applications were made on June 16, July 20, and August 5, 1998, by air using a helicopter. Dithane and copper applications were made on June 16 and on July 20. A Ridomil/Bravo application was made on August 27, 1998.

No other materials were applied, normal watering and the cultural practices continued through the trial period. Observations were made on a weekly basis until the trial concluded on September 15, 1998.

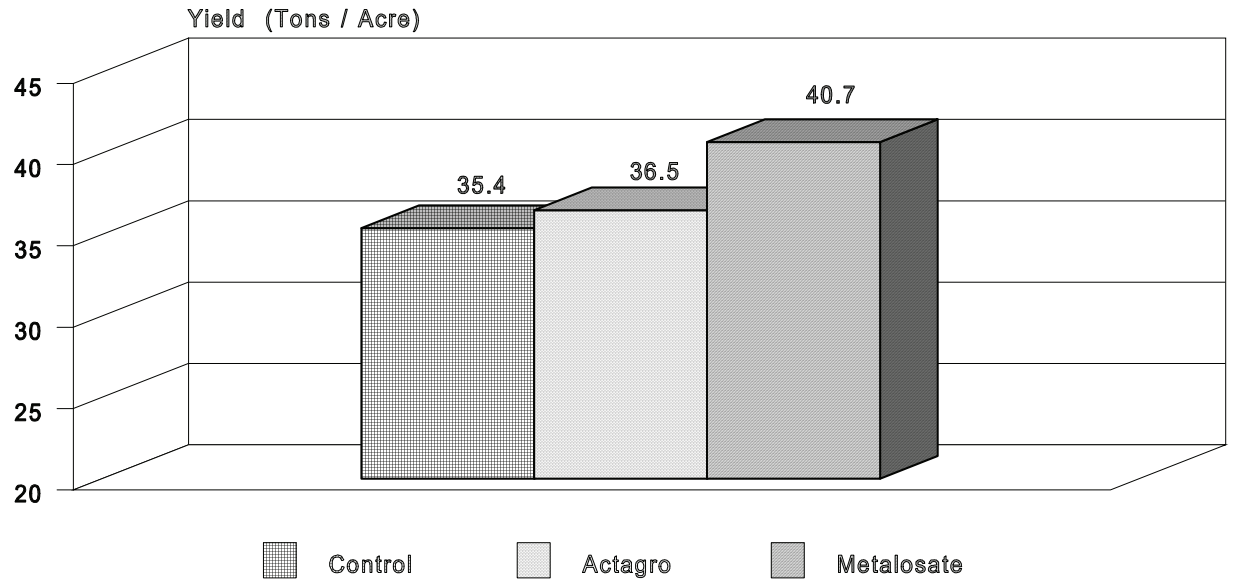
RESULTS

All the trial plots were hand picked and the tomatoes weighed separately. The Albion treated area (West section) showed a 11.5% increase in yield (4.2 tons/A, 9.4 tonnes/ha) compared to Actagro treated area (East section) and a 15.0 % increase in yield (5.3 tons/A, 12.7 tonnes/ha) compared to the grower's standard practice (Center section). The fruit quality in all areas appeared to be of similar quality in all three sections. Yield and fruit size was greater in the Albion treated section. No disease was observed in any of the treated sections.

CONCLUSIONS

Observations were made to determine yield, fruit weight, fruit quality, and disease severity. The treated areas were significantly higher in yield, and fruit weight, with fruit quality being similar in all three sections. Due to the El Niño weather experience in early 1998, direct seeded planting was delayed four weeks. After planting, heavy rainfall reduced plant vigor and population with Phytophthora reducing the plant population. It was observed that the planting was weakened and yield would be reduced. Three fungicide sprays were applied across all three sections. No blight pressure was noted due to properly timed fungicide applications. It was observed that Metalosates had an effect on plant growth and the ability for the plant to recover from the earlier growth setback. Overall yield was lower compared to the 1997 trial data. This was due to severe weather conditions during the early growing season. The differences however were comparatively similar to the previous year. This research indicates that Metalosates have a highly significant impact on yield.

Figure 1. Yield of processing tomatoes.



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